The Office of Solid Waste and Emergency Response (OSWER) requests the Science Advisory Board (SAB) to review the "***Approaches to Assessing the Benefits, Costs, and Impacts of the RCRA Subtitle C Program***" and "***Approaches to Assessing the Benefits, Costs, and Impacts of the Office of Underground Storage Tanks Cleanup Program***" reports and provide us with an SAB Advisory report.

Background

In 1996, OSWER began an effort to develop methodologies to better characterize and analyze the costs, benefits (including environmental, health, and other human welfare benefits), and other impacts of its various environmental programs. OSWER programs include:

- Superfund hazardous waste site cleanup program
- Resource Conservation and Recovery Act (RCRA) waste prevention and cleanup program
- Underground storage tank (UST) leak/spill prevention and cleanup program
- Brownfields program, which facilitates cleanup and redevelopment of "Brownfield" sites
- Oil spill prevention and response program
- Technology innovation program, which facilitates development and use of innovative technologies at hazardous waste sites
- Chemical emergency preparedness and prevention program, which manages Clean Air Act section 112(r) requirements for facilities to develop risk management programs to prevent accidental chemical releases. This program also manages Emergency Planning and Community Right-to-Know Act (EPCRA) section 311 and 312 requirements for facilities to provide the public and state and local officials with information concerning chemical inventories. The purpose of providing this information is to inform the public about potential chemical risks in communities and to enhance state and local preparedness to respond to releases of hazardous substances.

In the first step of this effort, OSWER identified a comprehensive set of program attributes that represent a broad range of potential impacts that may result from OSWER programs. We created this list of attributes by using traditional benefit/cost measures from the economic literature and EPA's Guidelines for Preparing Economic Analyses, and also by interviewing various OSWER managers and staff to identify any additional measures they believed would be important to capture in an analysis of their programs' benefits, costs, and impacts. For the UST program, we also interviewed state UST program managers. We asked managers and staff to identify program attributes they believed were important in "telling their programs' story." As a result, the list includes many traditional benefit/cost categories, some benefit/cost categories that are still evolving and being actively debated in economic circles (e.g., sustainability), and a number of other program features and factors that influence the design, implementation, performance, and impacts of OSWER programs (e.g., stakeholder issues, program impacts on technology development). Some of these factors look beyond the question of "How is the program performing?" and address "Why is it performing that way?"

To test the practical application of the list of OSWER program attributes, the second step in

this effort was to develop potential methods OSWER could use to qualitatively or quantitatively characterize and measure the attributes. OSWER selected two of its programs to serve as pilots, one prevention program and one cleanup program: the RCRA Subtitle C hazardous waste prevention and minimization program, and the UST cleanup program. The RCRA Subtitle C program was chosen as one of OSWER's most complex prevention programs, and the UST cleanup program was chosen as one of the less complex cleanup programs.

These reports represent the results of this second step. The reports describe a range of potential methodological options (from relatively simple to more complex) for characterizing and/or quantifying the attributes that are relevant to each of these programs, along with the advantages, disadvantages, and data requirements associated with the different methods. The purpose of the reports is to present and describe a range of possible approaches for characterizing and measuring the benefits, costs, and other program impacts for OSWER management to consider, including approaches that would be relatively less data- and resource-intensive. The goal of the reports is to provide a clear and transparent discussion of the options and their advantages and disadvantages. While methods that require the most resources and input data can often provide the most technically rigorous results if designed correctly, it was also recognized that resources are finite and it would be useful to identify a range of potential options with different levels of resource and data requirements. The reports were not intended to provide a specific recommendation on which option to implement.

Once methods are selected and implemented, the results would be used to provide a broad-based assessment of the benefits, costs, and other impacts of these programs. OSWER expects that these assessments would be reviewed and used by both internal EPA managers as well as external stakeholders with an interest in the OSWER program performance. We also hope that the selected methods could support OSWER's reporting under the Government Performance and Results Act (GPRA), which requires government agencies to develop methods for assessing the goals and performance of their programs.

Before selecting its preferred methods for implementation or applying the attribute list to other OSWER programs, OSWER is seeking the early review and advice of SAB on our list of program attributes and potential methods for characterizing these attributes.

It is important to note that at this time, the methods are developed at a more general level of detail than would be needed to ultimately implement them. The goal was to develop the methods in enough detail to allow OSWER managers to be able to select a preferred method from among them, rather than to describe each option to the extent that would be needed to proceed directly to implementation. In some cases, therefore, the reports identify issues that we recognize need to be addressed for certain options prior to implementation, but need not be resolved prior to our selecting our preferred method. Once preferred methods are selected by OSWER management, those methods will be developed in greater detail and subject to full peer review.

Charge Questions

1) Does the "OSWER Attributes Matrix" (Exhibit 1-1 in both reports) provide a good list of program attributes that could appropriately be used to describe OSWER program benefits, costs, impacts, and other key factors influencing program performance? Does the list provide a reasonable starting point for an analysis of an OSWER program that would ensure consideration of a broad range of program impacts and features? Should any attributes be modified, or deleted or added to this list, and if so, why?

2) Keeping in mind that it was OSWER's intention to evaluate a range of methodological options, and to include some relatively less resource-intensive options (recognizing these are likely to be less technically rigorous), are the methods presented viable and technically sound? Will the methods lead to defensible conclusions? Are the assumptions associated with the methods reasonable? If you believe any of these methods or assumptions are not viable, sound, or defensible, why not? Are the methods consistent with EPA's Guidelines for Economic Analyses, to the extent the guidelines address the OSWER program attributes?

3) Are the methods clearly and adequately described, for purposes of making a decision to select preferred methods for additional development and implementation? Are the advantages, disadvantages, and data requirements associated with each option clearly and adequately described? Is additional information needed for any of these methods in order for OSWER management to make an informed decision? If so, what information?

4) Are there alternative methods (or modifications of methods presented in the reports) that could be used to better characterize any of the attributes addressed in the two reports, keeping potential resource limitations in mind? If so, what are they and how would they help? We are particularly interested in seeking SAB advice on methodologies to characterize the more traditional human health/environmental benefits (which represent EPA's core areas of responsibility), but OSWER would also welcome any recommendations the SAB might have on better ways to characterize and/or quantify some of the more "non-traditional" attributes. These include sustainability and other long-term program impacts; the value of regulatory requirements that focus on providing information to the public; and the influence on program performance of factors such as stakeholder concerns and statutory/legal constraints.